WHAT IS CLAIMED IS:

1. A method for generating a transcriptionally active DNA molecule, comprising polymerase chain reaction (PCR) amplification of said DNA molecule in the presence of a first DNA fragment (F1), second DNA fragment (F2), first primer (P1), a second primer (P2), a third primer (P3), and a fourth primer (P4) wherein:

F1 comprises a promoter sequence;

F2 comprises a terminator sequence;

P1 is complementary to the 5' end of F1;

P2 is complementary to the 3' end of F2;

P3 comprises a first region complementary to the 3' end of F1 and a second region complementary to the 5' end of said DNA molecule;

P4 comprises a first region complementary to the 3' end of F2 and a second region complementary to the 3' end of said DNA molecule, whereby a transcriptionally active DNA molecule is produced by said PCR amplification.

2. The method of Claim 1, wherein F1 is the cytomegalovirus IE promoter.

3. The method of Claim 1, wherein said transcriptionally active DNA molecule encodes a therapeutic gene.

4. The method of Claim 1, further comprising the step of adding a PNA tail to the 5'-end of P1 and P2 prior to said PCR amplification.

5. The method of Claim 1, further comprising the step of adding a PNA clamp to said transcriptionally active DNA molecule after said PCR amplification.

6. The method of Claim 1, further comprising the step of adding a PNA molecule via a linker (PNA clamp tail) to primers P1 and P2 prior to said PCR amplification.

7. The method of Claim 1, wherein a thymidine base immediately precedes said region of complementarity between said third primer P3 and said first DNA fragment F1.

8. The method of Claim 1, wherein a thymidine base immediately precedes said region of complementarity between said fourth primer P4 and said second DNA fragment F2.